



**COMBINED FIRST AND SECOND SEMESTER B.TECH. (ENGINEERING)
DEGREE EXAMINATION, MAY 2011**

EN 04-104 B—ENGINEERING CHEMISTRY (B)

(For CE/ME/PE/AM)

Time : Three Hours

Maximum : 100 Marks

Answer all questions.

- I. (a) What is meant by slaking of lime ? Why is it done ? How is it done ?
 (b) What are boiler troubles ? How are they caused ? Suggest steps to minimize these troubles.
 (c) Suggest a suitable mechanism to get living polymers.
 (d) PVC is soft and flexible ; whereas bakelite is hard and brittle. Give reason.
 (e) Why should nickel plated steel articles be free from pores and pin holes ?
 (f) What are the various sources of air pollution ? Suggest some methods of prevent is air pollution.
 (g) Mention the merits and limitations of phase rule.
 (h) What is an eutectic ? Can it be called a compound ? Why ?

(8 × 5 = 40 marks)

- II. (a) (i) What is Plaster of Paris ? How is it made ? (7 marks)
 (ii) Discuss the manufacture of lime. (8 marks)

Or

- (b) (i) What is glass ? Discuss the manufacture of glass by pot furnace process. (7 marks)
 (ii) Describe the demineralization process of softening of hard water. What are its advantages over zeolite process. (8 marks)

- III. (a) (i) What is meant by functionality of molecules ? Give two examples each for bifunctional and trifunctional monomers and write down their structures. (7 marks)

- (ii) Draw and explain the structure of graphite and molybdenum disulphide. How are they used as lubricants ? (8 marks)

Or

Turn over

(b) (i) What is meant by compounding of plastics ? What are the different constituents of compounding ? Give examples, explain their functions.

(8 marks)

(ii) What are lubricants ? Discuss the mechanism of lubrication. Write a note on the flash and fire point of lubricants.

(7 marks)

IV. (a) (i) Draw and discuss the phase diagram for lead-silver system. (7 marks)

(ii) What are solidus and liquidus curves ? Explain with example. (8 marks)

Or

(b) (i) What is the effect of pressure on the melting point ice ? Explain with phase diagram.

(7 marks)

(ii) Draw a phase diagram of "Fe-C" system and state the important reactions taking place in the system.

(8 marks)

V. (a) (i) Describe the impressed current and sacrificial anode methods of corrosion control.

(8 marks)

(ii) Explain primary and secondary treatment process of sewage. (7 marks)

Or

(b) (i) How is ozone helpful in the existence of human life ? Give the importance and causes of depletion of ozone layer ?

(8 marks)

(ii) What are the sources of carbon monoxide and sulphur dioxide pollutants in air ? How are they controlled ?

(7 marks)

[$4 \times 15 = 60$ marks]